REMARKS/ARGUMENTS

This paper is filed in response to the Office Action of December 13, 2004 and the Advisory Action of April 29, 2005. In the Office Action, the Examiner made final the rejection of claims 1 and 8 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,794,973 to O'Loughlin *et al.* (hereinafter "O'Loughlin"). Claims 2-7, 9, and 10 were objected to, having been found to be allowable if rewritten in independent form to incorporate all of the limitations of the base claim and any intervening claims. The Amendment presented amendments to claim 1 and arguments supporting the allowability of the claims as amended.

In the Advisory Action, the Examiner stated that the previously-filed Amendment did not place the Application in condition for allowance. The Examiner further cited two new references which were asserted to read upon claim 1. No indication was given as to whether or not the Amendment was entered.

By this paper, the Amendment to claim 1 presented in the previously-filed Amendment is repeated, one additional amendment is made, and a Request for Continued Examination is filed along with the appropriate fees. In addition, arguments are presented to respond to the Schnöwitz and Dölling references newly-cited in the Advisory Action. Thus, claims 1-10 are presented for reconsideration.

Claim Rejections – 35 U.S.C. §102(b)

In the Office Action of December 13, 2004, the Examiner rejected claims 1 and 8 as being anticipated by O'Loughlin under 35 U.S.C. §102(b). A reference can properly anticipate a claim under 35 U.S.C. §102(b) "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131, *citing Verdegaal Bros. v. Union Oil Co. of California,* 814 F.2d 628, 631 (Fed. Cir. 1987). Applicants assert that O'Loughlin fails to teach each and every element of the claims as amended herein, and thus, that it fails to support this rejection under 35 U.S.C. §102(b).

In the Office Action, the Examiner maintained his rejection of claims 1 and 8 under 35 U.S.C. §102(b), taking the position that:

> an initial predetermined gas flow area exists in the interior of the chamber 48 initially. The fact that the reference teaches that the rupturable disk 102 ruptures

> when a predetermined pressure is reached makes it obvious that there is an initial predetermined gas flow in the chamber 48. Furthermore, when the rupturable disk 102 deforms the gas flow area increases into a diffuser 80, where the diffuser is considered part of the gas outlet. Therefore, the O'Loughlin et al reference teaches the gas outlet having an initial predetermined gas flow area, *the at least one gas outlet incorporating a deformable part configured to deform in response to predetermined gas pressure, thereby increasing the gas flow area of the gas outlet.*

Office Action, p. 2, paragraph 2 (emphasis added).

As amended herein, claim 1 states that the "gas outlet aperture ha[s] an initial cross-section to define an initial gas flow area, the at least one gas outlet aperture incorporating a deformable part configured to deform in response to a predetermined gas pressure, thereby increasing the cross-section of the gas outlet aperture to increase the gas flow area of the gas outlet." Claim 1, *supra.* Clear basis for these amendments can be found on page 10 of the specification. *See, e.g.,* Application specification, lines 4-22. Thus, the claim states that deformation of the deformable part increases the cross-section of the orifice of the gas outlet. Although O'Loughlin teaches opening of a previously-closed gas outlet orifice by expulsion of a burst disk, it provides no mechanism or teaching for altering the size of the cross-section of the gas outlet orifice.

Specifically referring to Figures 1-4 of O'Loughlin, the aperture 60 in the wall 62 of the chamber 48 and the apertures 82 through the housing 80 on the outside of the wall 62 of the chamber 48 may potentially be considered to define gas outlet apertures. This is so because each of these apertures is "located in a flow path from the chamber containing compressed gas to the exterior of the inflator" as stated by claim 1. Although each aperture 82 of the housing 80 could likely be construed to have "an initial cross-section," as described in claim 1, they do not incorporate "a deformable part configured to deform in response to a predetermined gas pressure," thereby increasing its cross-section, as required by claim 1. *See, e.g.,* O'Loughlin Figures 1-4, column 3, lives 36-44.

Similarly, with regard to aperture 60 formed through the wall of the chamber 48, although the aperture may potentially be considered to have an initial cross-section, and although aperture 60 is considered by the Examiner to incorporate a deformable part in the form of the

rupturable disc 102, once the rupturable disc 102 ruptures, the cross-section of the aperture 60 is not increased. Instead, the aperture 60 is merely exposed. The puncture hole in the ruptured disc similarly fails to meet the elements of claim 1 since it has no initial cross-section to define a predetermined gas flow area. Indeed, until ruptured, there is no aperture in the rupturable disc 122 at all. Applicants thus submit that since O'Loughlin does not disclose each and every element of claim 1 of the present Application, claims 1 and 8 are allowable as amended herein.

Rejections in the Advisory Action of April 29, 2005

In the Advisory Action of April 29, 2005, the Examiner stated that U.S. Patent No. 6,467,805 to Schnöwitz, *et al.,* (hereinafter "Schnöwitz"), teaches a "flap-like section," and U.S. Patent No. 6,786,507 to Dölling *et al.,* (hereinafter "Dölling"), teaches "a hybrid gas generator with deformable membrane that remain connected." Advisory Action, p. 1. No specific statutory grounds for rejection of the pending claims on the basis of these references were presented, however. Applicants have reviewed these references and respectfully traverse this rejection since the references are distinguishable from the invention as claimed, and are unable to support either an anticipation rejection under 35 U.S.C. §102, or an obviousness rejection under 35 U.S.C. §103. Applicants thus respectfully request withdrawal of the rejection and allowance of the pending claims as discussed in greater detail below.

Referring first to Schnöwitz, the Examiner stated that its teachings of a "flap-like section" "read[] on claim 1's gas outlet aperture." *Id.* The flap-like section referred to appears to be a tab (5) such as that illustrated in Figure 1. Applicants first note that the flap (5) taught by Schnöwitz is placed on a "gas collecting tube 1," the gas collecting tube being defined as "a hollow cylinder with a circular cross-section" that is placed about a gas generator as illustrated in Figure 2. *See, e.g.,* Schnöwitz, column 3, lines 63-column 4, line 12 and Figure 2. The flap (5) is defined by a series of "punched out areas" (2, 3, 4), formed in the gas collecting tube, and has webs 6 that leave it connected to the tube. The flap 5 is described to function as a diffuser by "let[ting] the gas jet flow sideways out of the gas collecting tube 1 across its longitudinal axis and enter the gas bag 8." *Id.,* at column 4, lines 28-30.

As amended above, claim 1 teaches:

> An inflator . . . comprising a hybrid multi-stage gas generator; the gas generator including a chamber accommodating compressed gas, a first pyrotechnic unit incorporating a first pyrotechnic charge . . . ; and a second pyrotechnic unit incorporating a second pyrotechnic charge . . . ; at least one gas outlet aperture being located in a flow path from the chamber containing compressed gas to the exterior of the inflator, the gas outlet aperture having an initial cross-section to define an initial gas flow area, the at least one gas outlet aperture incorporating a deformable part configured to deform in response to a predetermined gas pressure within the chamber, thereby increasing the cross-section of the gas outlet aperture to increase the gas flow area of the gas outlet.

(Portions omitted for clarity, see above for full text.) The flap 5 of Schnöwitz is taught to be provided in a gas collecting tube wrapped about an inflator, and thus does not represent "a gas outlet aperture . . . in a flow path from the chamber containing compressed gas to the exterior of the inflator" as stated in claim 1. Further, the flap 5 of Schnöwitz is taught to function as a diffuser, not as a gas outlet aperture in an inflator having a variable cross-sectional area. As a result, the Applicants believe that this reference is insufficient to support a rejection of the pending claims.

In the Advisory Action, the Examiner also cited the Dölling reference, asserting that Dölling teaches "a hybrid gas generator with deformable membrane that remain connected." Advisory Action, p. 1. As with Schnöwitz, no specific statutory rejection was made, and Dölling was simply asserted to "read[] on claim 1's gas outlet aperture." Dölling teaches a hybrid gas generator including a chamber with a pressurized fluid that is sealed with a rupturable membrane. *See, e.g.,* Dölling, Abstract. The membrane is taught to be a "thin skin" permanently attached to a chamber 10 filled with pressurized gas. In its initial condition, the membrane 22 completely seals the chamber 10. During use, the membrane 22 is punctured by a gas get produced by direction of combustion gases through the nozzles of an insert placed in the combustion chamber.

As with Schnöwitz discussed above, Dölling fails to teach a device that fits the limitations of claim 1. Specifically, claim 1 teaches a "gas outlet aperture having an initial cross-section to define an initial gas flow area." The membrane of Dölling has no aperture with an initial cross-section, and thus cannot define an initial gas flow area. In addition to the above, Applicants have further amended claim 1 to note that the gas outlet aperture of the present

invention "deform[s] in response to a predetermined gas pressure within the chamber." This helps highlight the differences between the instant invention and that of Dölling, since the membrane of Dölling is not deformed in response to a predetermined pressure within the chamber it seals, but is instead "destroyed" or "ruptured" by a gas jet from a "pyrotechnical propellant charge 12" located opposite the combustion chamber sealed by the membrane. Dölling, column 3, lines 42-59, column 4, lines 1-14. This promotes Dölling's purpose of providing an opening in the membrane without freeing any portion of the membrane, and thus avoiding the clogging problems faced by some inflators in the art. Dölling, column 1, lines 33-37 and 54-column 1, line 7. Thus, the membrane is not deformed "in response to a predetermined gas pressure within the chamber," but is instead destroyed by jets of combustion gases projected from the ignited propellant charge 12. Dölling is thus similarly insufficient to support a rejection of the pending claims of the present Application, and Applicants respectfully request withdrawal of this rejection.

Applicants respectfully request that a timely Notice of Allowance be issued in this case. If there are any remaining issues preventing allowance of the pending claims that may be clarified by telephone, the Examiner is requested to call the undersigned.

Respectfully submitted,

Craig Metcalf
Reg. No. 31,398
Attorney for Applicants

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MADSON & METCALF
Gateway Tower West
15 West South Temple, Suite 900
Salt Lake City, Utah 84101
Telephone: 801/537-1700